

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the matter of

Federal-State Joint Board on
Universal Service

CC Docket No. 96-45

**Comments On Updating Line Counts and Other
Limited Information Used in Calculating High-Cost
Universal Service Support For Non-Rural Carriers**

I . INTRODUCTION

The Maine Public Utilities Commission and the Vermont Public Service Board (“Rural State Commissions”) are pleased to file comments in response to the Notice of the Wireline Competition Bureau, DA 03-25. The notice requested comment on how line count and other discrete input values should be updated for purposes of determining support upon implementation of the revised version of the Commission’s cost model. These comments are in response to that notice.

II . THE 2002 RECONSIDERATION PETITION

On December 18, 2001, the Commission issued its 2002 Line Counts order. That order established the input parameters for the 2002 support distribution to nonrural carriers and resolved for 2002 the same issues presented here. The output of that cost model is used to determine the level of support for non-rural companies for the year 2002, including support to Verizon-Maine and Verizon-Vermont.

On February 22, 2002, the Rural State Commissions filed a Petition for Reconsideration of that order. The reconsideration petition challenged the use of revised ARMIS data to update some but not all inputs to the Commission's synthesis model. The reconsideration petition is still pending.

To calculate a carrier's support for the 2002 year (and into 2003), the Wireline Competition Bureau ("WCB") conducts a complex pre-processing routine for special access line counts. First, carriers count their current DS1 lines in each study area, and multiply them by 24 equivalent voice grade circuits. Current DS3 lines are then counted and multiplied by 672 equivalent voice grade circuits. The sum of these two numbers are then reported to the WCB through the ARMIS 43-08 report for each study area. Then the WCB takes these ARMIS numbers and distributes the special access lines throughout each study area and to particular wire centers based on other, older, data taken from a 1999 Data Request.

The 2002 Reconsideration Petition challenged this process in two fundamental ways. The Rural State Commissions asserted that the WCB should not be including any DS3 data, because the model was not designed to process such data and because including it distorted the resulting cost outputs. We also asserted that the WCB process for allocating special access lines to particular wire centers was seriously flawed because it used an inappropriate mixture of new and old data, thereby producing distorted results. We explained in detail the reasons why it is inappropriate to use old data on special access line locations to allocate current lines to specific wire centers. We also observed that these new data appeared to be the principal reason that Maine and Vermont received reduced support in 2002.

In this notice the Commission has proposed to again use revised ARMIS data to partially update the inputs to the synthesis model. However, nothing in the notice suggests that the Commission has resolved the issues raised by our 2002 Petition for Reconsideration or otherwise found ways to improve the accuracy of that revised data. Accordingly, we incorporate that petition by reference here and request that the Commission rule on all the issues raised therein.

III. ANALYSIS OF VERIZON DATA

Since the changed special access line counts based on the ARMIS data had such a large effect on 2002 support for Maine and Vermont, we have investigated the effects of using updated ARMIS 43-08 data to partially update the model inputs. We conclude that the methods used last year and proposed again for this year would produce highly unreliable line counts and costs. Notably, the proposed method overstates urban costs and understates rural costs, thereby producing insufficient support.

A. The Verizon Data

Using our authority derived from state law, the Maine Public Utilities Commission and Vermont Public Service Board requested special access line counts from Verizon. As requested, Verizon did submit detailed data for Maine and Vermont. The data were based on ARMIS 43-08 line counts submitted on April 1, 2002 and reflect the number at the end of 2001. The report provides, for each wire center in Maine or Vermont, the number of DS1 and DS3 lines served by Verizon.

Using that data, we then calculated voice-grade-equivalent circuits for each wire center using the same rules that the Commission directs carriers to follow in preparing their ARMIS 43-08 reports. The new data were then compared to existing WCB data that had been used for the 2002 support year calculation. For each wire center we calculated both a line (voice circuit) correction and a percentage correction.

This work relied on confidential information from two sources. First, consistent with earlier FCC orders, Verizon has claimed confidential treatment for the wire center detail it provided to us. Second, the last portion of our work relied on detailed cost results, by wire center. This information was obtained under a confidentiality agreement from USAC because, once again, it contains detailed line counts. Accordingly, this filing has been generalized to remove the possibility that third parties could infer the special access line counts of any particular wire center. Unredacted data and calculations will soon be made available to FCC staff through an *ex parte* presentation concerning the Reconsideration Petition.

1. Findings and Discussion - DS3 Lines

The Reconsideration Petition asserted that the Commission's cost model apparently is not prepared to process DS3 input data accurately because the model treats a single DS-3 line as 25.7 four-wire DS-1 circuits plus 55 two-wire DS-0 circuits. When the Reconsideration Petition was filed, we recognized that this error could significantly affect the costs calculated by the model and hence the distribution of support, because if fictitious special access lines were included in the inputs, the cost outputs might not be reliable.

The Verizon data show that including DS3 lines have a substantial impact on cost calculations. In Vermont and Maine, the inclusion of DS3 lines in the ARMIS count increased the reported total number of special access lines by 58 percent. But this 58% increase does not represent an actual increase in special access lines, much less an increase in lines distributed throughout wire centers in Maine and Vermont as the WCB inputs to the model imply. Thus the cost outputs of the model – which inappropriately and incorrectly equate the costs of 25.7 DS-1 plus 55 DS-0 circuits with the cost of each DS-3 circuits – cannot be relied upon to calculate non-rural support.

2. Findings and Discussion –WCB Line Count Preprocessing

a) Line Counts

The Verizon data show more generally that the special access line count data used to calculate high cost support in 2002 were highly unreliable. For each wire center with reported data,¹ we calculated the percentage correction needed, using the WCB data as a base. In one case a correction of minus 94% was required. In other words, in this wire center correcting the WCB data required elimination of 14 of every 15 lines in the WCB data. At the other extreme, in one small town a correction of plus 363% was required. In this wire center, for every line in the WCB data set, an additional 3.6 lines should be added. The standard deviation of the range of percentage corrections was 55%.

The data show that WCB data have significant errors² for 78

¹ Verizon did not report special access line counts in approximately 15 wire centers identified in the cost model.

² We defined “significant error” as data that require a correction of at least 25% in either direction.

percent of the wire centers in the two states, serving 73 percent of all lines. This alone establishes that the existing WCB data are highly unreliable.

In about three out of four wire centers the errors were overestimates.³ This is particularly surprising since overall the WCB data set underestimates the total number of special access lines by 20 percent.

We also found that wire center size had a strong relationship to the bias of the WCB data. For small wire centers with less than 3,000 switched access lines, we found that the WCB data overestimated special access lines in 83 percent of the cases, representing 84 percent of the lines in this size class. For larger wire centers, the opposite was true. For wire centers with at least 10,000 switched access lines, the WCB data understated the true value in 58 percent of the wire centers representing 68 percent of the lines in this size class.

To verify that the WCB data are indeed biased by size, we reversed the analysis and examined the characteristics of wire centers with large overstatements or understatements. The results confirmed these conclusions. In cases where the WCB data contains large overstatement of true line counts,⁴ the typical wire center is only about half the average size in switched lines.⁵ Conversely, in cases where the WCB data make a large understatement of true line counts,⁶ the typical wire center is 75 percent larger than average.⁷

b) Actual Special Access Locations

To understand the reasons for this bias, we examined individually those wire centers where the WCB data make a large understatement of true line counts.⁸ The overall pattern is that wire centers with large understated line counts tend to fall into three groups.

³ Overestimates occurred in 74 percent of the wire centers in the sample.

⁴ We defined "large overstatement" as an error requiring a negative correction of 50% or more.

⁵ The average wire center requiring a large negative correction has 2,470 switched lines, compared to an average of 4,823 lines in the two-state data universe.

⁶ Similar to the preceding analysis, we defined "large understatement" as an error requiring a positive correction of 50% or more.

⁷ The average wire center requiring a large positive correction has 8,455 switched lines, compared to an average of 4,823 lines in the two-state data universe.

⁸ Interpreting the pattern requires some familiarity with the demographics and telecommunication characteristics of the areas being examined.

1. Large cities.
2. Mid-sized wire centers where there is CLEC collocation or a home office of a CLEC/ISP.
3. Mid-sized wire centers with a known significant business enterprise.

Our findings tend to show that the WCB data is unreliable. The WCB data overestimates special access lines in small wire centers and underestimates special access lines in large wire centers. As a result, the special access line counts in the WCB data set are unreliable for both urban and rural areas.

c) Costs and Support

Since the model's unit cost outputs are generally lower where line density is higher, these errors are likely to cause the cost model outputs to overstate urban costs and understate rural costs. The distribution mechanism calculates support based on the differences between high cost areas and national averages, and national cost averages are heavily influenced by urban costs.

For these reasons, the preceding line count errors have two predictable effects on support. First, the total amount of support available to non-rural ILECs serving rural areas would be reduced, possibly below levels of sufficiency. Second, the "portable" support provided to competitive carriers would be unreliable and would generally tend to provide too little support to competitive carriers serving very high cost wire centers.⁹

To test the size of the first effect, we performed a three-step analysis with the new Verizon data.

⁹ This would happen not only because too little support is provided to the ILEC study area, but also because the costs will be too low in the typical rural wire center generating portable support, thereby distorting the portability algorithms.

1. We ran the Turbo-Pascal version of the model once using standard WCB data and then a second time using the new Verizon data. We then compared the outputs and calculated a cost correction, per line per month, for each wire center.

2. We placed wire centers into size groups and calculated for each group a single cost correction that would, based on the group's average characteristics, correct the model's cost outputs.

3. We applied the correction factors to the model output cost of each wire center in the country operated by a nonrural carrier, based on its group membership, and calculated high cost support for each state using the corrected cost amounts.

As expected, the step 2 results show that a strong correction is needed based on wire center size. The following table shows the cost corrections developed in step 2.

Wire Center Size Class (switched lines)	Average Cost Correction
0 to 999	\$ 0.11
1,000 to 2,499	\$ 0.23
2,500 to 9,999	\$ 0.22
10,000 to 24,999	- \$ 0.26
25,000 or more	- \$ 0.78

In sum, assigning special access lines to wire centers where they actually exist has the effect of reducing unit costs in large wire centers (primarily urban areas) and increasing unit costs in small wire centers (primarily rural areas).

When these correction factors were applied to the distribution mechanism in step 3, support increased in both Maine and Vermont in calendar 2002. Maine support increases from \$5.45 to \$9.56 million, or \$0.49 per line per month. Vermont support increases from \$9.09 to \$11.26 million, or \$0.50 per line per month. In both cases, the effect is substantial. Nationally, the total amount of support increased from \$232 million to \$268 million.

3. Conclusion – The Verizon Data

This work demonstrates that the flaws in the WCB's data processing procedures have substantial adverse effects on Maine and Vermont. We now know that the number of DS3 lines is large enough to have a substantial distorting effect on line count results. We also know that, setting this problem aside, the partial updating of line count data, by using

new study area totals without using new wire center data, distorts the cost results of the model and would substantially harm the Verizon ratepayers in Maine and Vermont.

III . UNE DATA

In addition to the problems identified last year, we have an additional concern relating to the treatment of Unbundled Network Elements (UNEs). We understand that some, possibly most, local exchange carriers do not consider loop UNEs as “lines” for ARMIS reporting purposes. Any such practice would substantially distort the results of the cost model in wire centers with substantial UNE platform local competition, usually by reporting too high a cost. Since competition is established primarily in urban areas, the model outputs will increase urban costs. This in turn will increase the national average cost and, all else equal, reduce support to high cost rural areas. This could provide insufficient support to high cost areas in violation of section 254 of the Act.

IV . RECOMMENDATIONS

The Commission should update the synthesis model input data comprehensively or not at all. The current method, consisting of a mélange of old and new data, has the demonstrated effect of providing insufficient support to high cost ILEC customers as well as too little portable support to customers of CLECs serving high cost areas. If our analysis of 2002 is any guide to 2003, using some new data and some old data will make these problems, already intolerable in 2002, worse in 2003. It would be arbitrary and capricious for the Commission to update data unless they know it is accurate.

If the Commission wishes to use current line count data, it should issue a data request to all nonrural local exchange carriers. The data request should direct carriers not to include DS3 special access lines¹⁰ and to report DS1 special access lines by wire center. The data request also should direct carriers to include UNE lines in their switched line counts. The Commission should also validate the accuracy of those data request responses before using the data results.

¹⁰ In the alternative the Commission should direct carriers to report DS3 lines separately and modify the cost model platform so as to accurately reflect the costs of these facilities.

If the Commission is unwilling to collect complete current data, it should not try to use a mixture of current general data and old specific data. As shown above, that distorts virtually all aspects of the Commission's support calculations. Rather, the Commission should revert to special access line counts used to distribute support in 2000, the first year of the new forward-looking cost system. While these line counts are not current, at least they do not distort costs by artificially moving into rural areas both new urban lines and the voice equivalent of broadband circuits.

Alternatively, the Commission could order that carriers should receive in 2003 the greater of the amount already calculated for 2003 using the new proposed data or the amount actually distributed in 2000, the last year before these problems arose. Invalid calculations and data should be not used to reduce support to states that are entitled to the earlier support levels calculated when input data were more reliable. Only in this way can the Commission meet its Section 254(b) obligations to keep rural rates affordable and reasonably comparable to those in urban areas.

Respectfully submitted on February 28, 2003

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CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing comments will be mailed to the persons on the attached list.

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